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EXAMINER
WONG, ALLEN C

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/623,195	LEE ET AL.
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _18 June 2007_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-10,12-18 and 20-23_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-10,12-18 and 20-23_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _6/26/07_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1, 8 and 16 have been considered

but are moot in view of the new ground(s) of rejection.

Regarding 101 rejection on claims 16-22, the claim's preamble should be

amended to "a computer readable-medium **encoded with** a computer executable

instructions for executing on a computer to decode a differential quantization coded

video bit stream, comprising" to meet with today's 35 U.S.C. 101 statutory requirements.

The current claim 16 needs to remove the term "having" and replace with "encoded

with" to meet with today's 35 U.S.C. 101 statutory requirements.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent
Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV,
reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional
> descriptive material." In this context, "functional descriptive material" consists of data structures and
> computer programs which impart functionality when employed as a computer component. (The
> definition of "data structure" is "a physical or logical relationship among data elements, designed to
> support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and
> Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited
> to music, literary works and a compilation or mere arrangement of data.

> When functional descriptive material is recorded on some computer-readable medium it becomes
> structurally and functionally interrelated to the medium and will be statutory in most cases since use of
> technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32
> F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a
> computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33
> F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in
> memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at
> 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claims 16-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 16 defines *a computer-readable program carrying medium having a computer-executable software* embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim *a computer-readable program carrying medium having a computer-executable software* to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

The preamble needs to be rewritten as "a computer readable-medium encoded with a computer executable instructions for executing on a computer to decode a differential quantization coded video bit stream, comprising:".

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-10, 12-18 and 20-23 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Altieri (6,104,751) in view of Jacquin (5,764,803).

Regarding claim 1, Artieri discloses a method of differential quantization in video

coding of a coded video bit stream, comprising:

analyzing motion vectors of macroblocks for a frame of a video sequence to

estimate motion of the video at the frame in the video sequence (col.7, ln.10-21);

classifying regions of the frame according to perceptual significance based on

the global motion estimate (col.8, ln.13-33; note regions of frame data is classified);

differentially quantizing the regions according to their perceptual significance

classification in coding a compressed bit stream of the video sequence (fig.3, note

element 12 is interactively connected by having input data from elements 10, 24 and

28 for controlling a quantization strength applied to the inverse quantizer 12);

signaling different quantization of the regions in the compressed bit stream,

wherein the signaled different quantization includes signaling different quantization

strength for macroblocks in a region on at least one boundary edge of the frame (fig.3,

Artieri discloses element 12 is interactively connected by having input data from

elements 10, 24 and 28 for controlling a quantization strength applied to the inverse

quantizer 12 depending on the image data detail, and col.20, ln.42-54);

reading the signaled different quantization from the compressed bit stream (fig.3,

element 10 and col.7, ln.10-21); and

dequantizing the macroblocks of the frame according to the signaled different

quantization (fig.3, element 12).

Artieri does not specifically disclose the limitation "determine whether global

motion estimation of the video at the frame in the video sequence is characteristic of

panning or zooming". However, Jacquin teaches determining whether global motion

estimation of the video at the frame in the video sequence is characteristic of panning

or zooming (see col.3, ln.61-66 and col.4, ln.40-42, the zoom and pan data are

characteristics that are included in global motion parameters that are analyzed and

considered during the analysis of motion vector data from macroblocks, and col.5, ln.1-

4, wherein global motion parameters are updated and refined). Therefore, it would

have been obvious to one of ordinary skill in the art to combine the teachings of Artieri

and Jacquin, as a whole, for accurately, efficiently encoding/decoding image data while

maintaining high image quality and reducing bandwidth requirements (Jacquin's col.2,

ln.43-47).

Regarding claims 8, 16 and 23, Altieri discloses a method, computer readable

medium, and video decoder comprising:

an inverse quantizer for dequantizing coded macroblocks of a frame in a video

sequence encoded in a compressed video bit stream (fig.3, element 12);

a side information decoder for reading side information encoded apart from

compressed video content in the compressed video bit stream according to a syntax

scheme, wherein the side information includes information of differential quantization

applied to macroblocks of the frame in regions (fig.3, element 10); and

a dequantization controller for controlling a quantization strength applied by the

inverse quantizer in dequantizing individual macroblocks of the frame in accordance

with the decoded side information of differential quantization of the respective

macroblocks (fig.3, note element 12 is interactively connected by having input data

from elements 10, 24 and 28 for controlling a quantization strength applied to the

inverse quantizer 12).

Artieri discloses the boundary areas of images (col.20, ln.42-54; Artieri discloses

that boundaries of slices are considered and determined during image

encoding/decoding process, wherein slices are part of an image frame). Artieri does

not specifically disclose the term "wherein the syntax scheme identifies a differently

quantized region to be from among a list of coding possibilities that comprises a single

boundary edge and a pair of adjacent boundary edges of the frame". However,

Jacquin discloses the identifying the differently quantized region to be from among the

list of coding possibilities that comprises the single boundary edge and the pair of

adjacent boundary edges of the frame (col.6, ln.11-57, Jacquin discloses that the

image edges are detected, determined and considered in the coding process in that in

figure 1, there are coders 32 and 34 that implement quantization levels depending of

the image data from edges detected, and that a plurality of step sizes can be applied

for quantization depending on the type of image data as disclosed in col.10, ln.2-24).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Artieri and Jacquin, as a whole, for accurately, efficiently

encoding/decoding image data while maintaining high image quality and reducing

bandwidth requirements (Jacquin's col.2, ln.43-47).

Note claims 12-15 and 17-22 have similar corresponding elements.

Regarding claims 9-10 and 17, Artieri does not specifically disclose determining

whether global motion estimation of the video at the frame in the video sequence is

characteristic of panning or zooming. However, Jacquin teaches determining whether

global motion estimation of the video at the frame in the video sequence is

characteristic of panning or zooming (see col.3, ln.61-66 and col.4, ln.40-42, the zoom

and pan data are characteristics that are included in global motion parameters that are

analyzed and considered during the analysis of motion vector data from macroblocks,

and col.5, ln.1-4, wherein global motion parameters are updated and refined).

Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Artieri and Jacquin, as a whole, for accurately, efficiently

encoding/decoding image data while maintaining high image quality and reducing

bandwidth requirements (Jacquin's col.2, ln.43-47).

Conclusion

3.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Allen Wong whose telephone number is (571) 272-7341.

The examiner can normally be reached on Mondays to Thursdays from 8am-6pm

Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Allen Wong
Primary Examiner
Art Unit 2621

AW
8/27/07